

Kinetic Inductance Detectors for Far-Infrared Spectroscopy

Completed Technology Project (2013 - 2017)



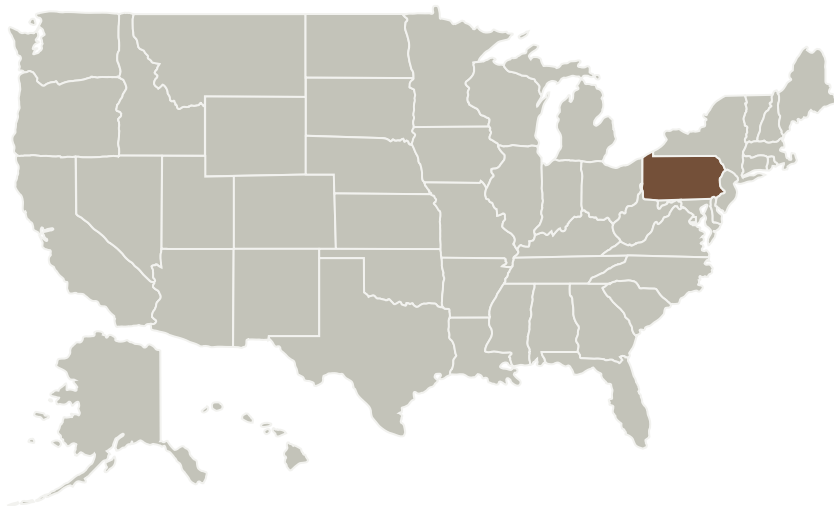
Project Introduction

I propose to do research to develop kinetic inductance detectors (KIDs) as a tool for far-infrared spectroscopy. Incorporating KIDs as the key detector technology of a sub-orbital or satellite mission to observe the sky at far-infrared wavelengths will allow for highly sensitive extragalactic spectroscopy, leading to new insights in galaxy formation and evolution. Specifically, I propose to develop KID technology to allow for improved sensitivity and larger detector arrays for long-slit, direct-detection spectroscopy.

Anticipated Benefits

Incorporating KIDs as the key detector technology of a sub-orbital or satellite mission to observe the sky at far-infrared wavelengths will allow for highly sensitive extragalactic spectroscopy, leading to new insights in galaxy formation and evolution.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
University of Pennsylvania	Lead Organization	Academia	Philadelphia, Pennsylvania



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Primary U.S. Work Locations

Pennsylvania

Project Website:

<https://www.nasa.gov/directorates/spacetech/home/index.html>

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

University of Pennsylvania

Responsible Program:

Space Technology Research Grants

Project Management

Program Director:

Claudia M Meyer

Program Manager:

Hung D Nguyen

Principal Investigator:

James Aguirre

Co-Investigator:

Alyssa C Barlis

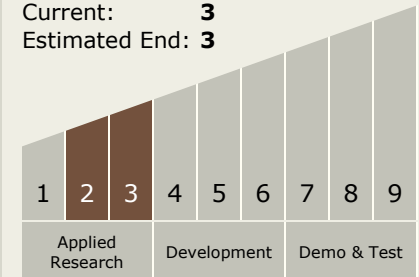
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Technology Maturity (TRL)

Start: **2**
Current: **3**
Estimated End: **3**



Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.1 Remote Sensing Instruments/Sensors
 - └ TX08.1.1 Detectors and Focal Planes

Target Destination

Outside the Solar System